AMSAT SATELLITE REPORT

Number 26
February 8, 1982

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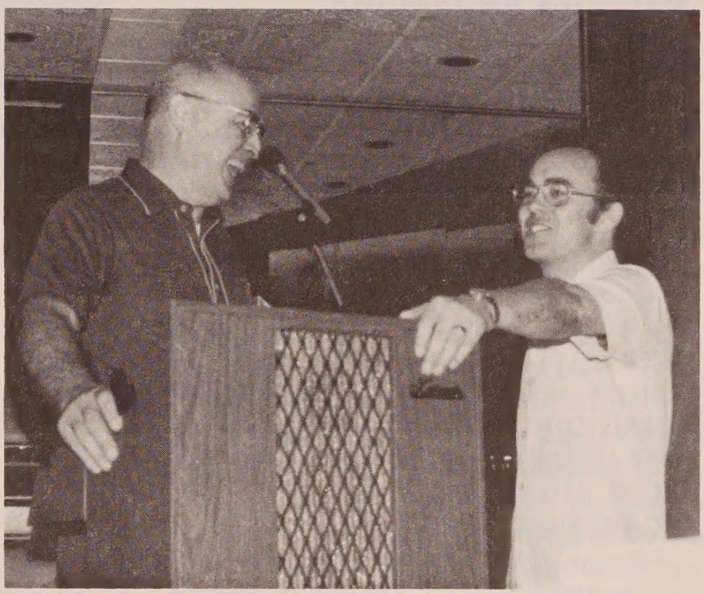
Colonel John W. Browning, Space Division, Retires

The following U.S. Air Force news release is published to honor W6SP.

"The Department of the Air Force announces the retirement of Colonel John W. Browning, Deputy for Space Communication Systems, Space Division, Los Angeles Air Force Station, California. Colonel Browning was born in Wheeling, W.V. on May 18, 1924. At age 18, following graduation from Terra Alta High School, he enlisted as a Private in the U.S. Army Reserve and in February, 1943, was called to active duty. He entered pilot training as an aviation cadet and in 1944 received his wings and a commission as a Second Lieutenant in the Army Air Corp at Moody Field, Valdosta, Ga. His first assignment was a combat tour with the 98th Bomb Group in Italy as a B-24 pilot after which he returned to the States for training as a B-29 Commander. Upon cessation of hostilities, Colonel Browning was released from active duty and entered West Virginia University. In 1949 he received a Bachelor of Science Degree in Electrical Engineering and then worked as a maintenance engineer in private industry until May, 1952, when he was recalled to active duty with the Air Force. He served as an avionics maintenance officer with the 509th Bomb Wing in Roswell, N.M. followed by a tour with the 58th Fighter Bomber Group in Korea. From 1954 to 1957, Colonel Browning became combat ready in the F-86 while stationed at Yokota Air Force Base, Japan with the 40th Fighter Interceptor Squadron.

"The next three years were spent as a Flight Commander in the Air Force Basic Pilot Training Program at Webb Air Force Base, Texas. In 1960 Colonel Browning went to Purdue University under the Air Force Institute of Technology Program and in 1961 received a Masters Degree in Industrial Management. His follow-on assignment was to the Ballistic Systems Division at Norton Air Force Base, California until 1965. He then served with the Secretary of the Air Force Special Projects Office at Los Angeles Air Force Station, California prior to a three year tour with the Air Force Office of Space Systems in Germany. In 1974 he was chosen Commander of the Satellite Test Center at Sunnyvale, California and in 1977 became Vice Commander of the Air Force Satellite Control Facility. Returning to Los Angeles in 1978, Colonel Browning was assigned to Space and Missle Systems Organization, the forerunner of Space Division as Assistant Deputy for Space Communications Systems and Program Director for International Communications Satellites. He assumed his present position as Deputy for Space Communications Systems in 1979. In addition, he recently became the Program Director of the MILSTAR strategic and tactical communications satellite system. His retirement today culminates a distinguished career spanning 32 years of active duty and 39 years of total military service to his country.



W6SP (left) and G3YJO share a laugh at the podium during the Project OSCAR meeting in El Segunda, CA 29 Aug. G3YJO and the Surrey UoSAT team with W3GEY were in Southern California to preapre UoSAT for launch.

"Colonel Browning is a command pilot with over 3200 hours flying time and 40 combat missions to his credit. He has been awarded the Distinguished Service Medal, Legion of Merit with one oak leaf cluster, Distinguished Flying Cross, Meritorious Service Medal, Air Medal with two oak leaf clusters, Air Force Commendation Medal with one oak leaf cluster, the Purple Heart and he wears the Master Missleman Badge."

The Distinguished Service Medal is the highest peacetime medal awarded in the U.S. Colonel Browning's award is a singular honor. The citation accompanying the Medal reads in part as follows:

"Through his superb management and forceful leadership in this important position "(Deputy for Space Communications Systems)" he contributed immeasureably to the establishment of superior satellite communication systems to support the global operations of the United

States and North Atlantic Treaty Organization military forces. His technological foresight, initiative and personal dedication have charted the course for development of satellite communication systems through the next decade.

"The singularly distinctive accomplishments of Colonel Browning culminate a long and distinguished career in the service of his country and reflect the highest credit upon himself and the United States Air Force."

John adds with tongue firmly planted in cheek that along with Admiral Rickover, he just couldn't figure out to stay on any longer.

Mystery Veils 13cm Satellite Emissions

An earth satellite transmitting in the amatuer 13cm band has been positively identified by a number of reliable European sources. Though the ID of the mysterious bird is unknown, some of its orbital characteristics are coming to light.

AMSAT South Africa President ZS1BI, Greg Roberts, received the following telex from ESRU (European Satellite Research Unit) last month:

"HIGH ERP TRANS FM SAT HEARD ON 2304.000 MHZ OVER PAST FEW MONTHS BY AMATEURS IN W. EUROPE. NEAR POLAR AS OVER SAME TIME IN DAY. HEARD ON 1.5 M PARABOLIC. CAN BE HEARD FOR 10-12 HOURS ON 1 TRANSMIT. MAINLY CW, SOME TELEM. ANY IDEAS?

REGARDS MAX ESRU"

February *QST*, page 74 makes reference to (apparently) the same object in "The World Above 1 Gig" column by KA1GT. "The signal is quite strong, being copyable on a dish feed horn at 6 to 10 dB above the noise using a 3 dB NF preamp and a 2.5 kHz bandwidth."

Why would any commercial or military entity place a satellite in the amateur 13 cm band? And if it's an amateur bird, then why don't we know about it? Is there any connection between this emitter and the (non) goings-on on RS-3 and RS-4? There are a number of persons and agencies around the world who would like to have some answers on this one!

Recent AMSAT Appointments

AMSAT Headquarters announced recently the following appointments. W2HG, Bob Rossi, has been appointed Area Coordinator for Western New York. Bob had previously coordinated the Satellite User's list for the Callbook. W2FPY and crew picks up this task. The following named individuals have been appointed Assistant Area Coordinators for the areas indicated: WB5PMR, Allen Brinkerhoff, for North Texas; WØVO, Ed Means, for Colorado; W3HV, Bill Clepper, Western Pennsylvania. An Area Coordinator for the State of Arkansas is needed following the relocation of WB5KIE out of the state. In Canada, VE4NI, Don Campbell, has been appointed Area Coordinator for Winnipeg.

N6TE, Harry Bluestein, of LaJolla, California has volunteered to assist with the West Coast 75 meter net.

Congratulations and thanks to the new volunteers/appointees!

Now There Are SEVEN RS's?!?

Frankly, had the following report been received from any other than an individual of superb observational abilities and credibility, we would have treated the report with something less than the proverbial "bum's rush." Nevertheless, Birger Lindholm is known in satellite circles for his studious attention to detail and careful screening of questionable data. In a recent letter to *ASR* Editorial offices Birger writes:

Dalsbruk Finland, 19 Jan. 82

Dear Rip:

I want to inform you that today, 19 Jan. 82, I heard the beacon of RS-1 at 1234-1236Z on 29401 kHz. The signal-strength was quite weak but I copied the following telemetry: P01, C??, F??, Z??, L84, B01, H01, O?0, W01, K01, U43, G34, R32, D21, S01.

At the end of the number was the letter O. (Ed ?) At the end of the frame the beacon gave "RS RS". The satellite was probably quite near TCA because of the fast Doppler.

Channel L indicates that there is still some power in the battery. Channel B (9 volt regulator) and H (7.6 volt regulator) seems to be out of operation. (Unless this is RS-2 which would explain the 01 on channels B and H.) Channel R (HF out?) indicates that the transponder should be on, but I didn't have the time to listen in the passband.

The new RS's are functioning quite well despite the QSB on the downlink and beacon frequencies. It is quite a job to keep track of all 8 birds with a calculator. HI!

Good luck for the new year to you and your family.

73, Birger AMSAT LM-728

RS Birds Launch DX Barrage

The advent of the new Russkie amateur satellites has unleashed a virtual salvo of new DX achievements. Witness a recent weekend (Jan 29-31) during which VE2LI worked KH6IBA for the former's long-sought WAC with satellite endorsement. If approved this would be only the second time the feat has been acocmplished. WØCA did it from Minnesota two years ago. (See *ASR* Spotlight on WØCA, *ASR* #21, 30 Nov. 81; also see *ORBIT* Magazine #5, page 29.)

Also on the DX achievement trail were W2RS and W1NU, both high on the list of all-time satellite do-it-alls. W2RS, with his call here obtaining deeper significance even than his handle, Raphael (Ray) Soifer, worked KH6IBA to record the first ever New Jersey to Hawaii satellite QSO. This was #50 for Ray who joins the select club with the satellite endorsement to a WAS award. Ray also points out that all fifty were made on a #6 bird: 49 states on AMSAT-OSCAR 6 and 1 on RS-6!

W1NU worked KH6IBA the same night that VE2LI did for W1NU's 50th. Vic had been working with George, VE2LI, and Jim, WA1ZUB to help set up the New England states and Eastern Canadian Provinces for the KH6's. With WAS now in the bag for W1NU he will become the only station to have achieved BOTH satellite DXCC (#3) and Satellite WAS.

Excerpts From Sovetskie Patriot

(Translation by W4KM; provided by KB4ZJ)
(1 Jan. 82)

The satellites Radio-3 - Radio-8 placed in orbit 17 December 81, have made their first hundreds of rotations around Earth. The Central Reception-Command Point of the Central Committee of DOSAAF/USSR is carrying out the reception and analysis of telemetry information arriving from on board each satellite. Amateur radio stations attached to the reception-command point are refining the orbital parameters. Operation by radio amateurs through the satellites repeaters has begun; the period of experimentation continues for these.
(10 Jan. 82)

The satellites Radio-3 and Radio-4 are operating in a mode of 'round-the-clock transmission of telemetry information with radio beacon power raised to 1 watt, on the frequencies: Radio-3—29,320 kHz; Radio-4—29,360 kHz.

The repeaters on the satellites Radio-5, Radio-6, Radio-7 and Radio-8 have paired common frequency segments: Radio-5 and Radio-6—145,910-145,950 kHz (Earth to Space), 29,410-29,450 kHz (Space to Earth); Radio-7 and Radio-8—145,960-146,000 kHz (Earth to Space), 29,460-29,500 (Space to Earth), and therefore simultaneous operation in a common radio visibility zone is permitted only for two repeaters in different frequency segments. When the satellites separate and when they subsequently fly through the radio visibility zone all four repeaters can operate without mutual interference.

Beacons are operating with reduced power (0.1 watt) on the repeater satellites transmitting telemetry information on the frequencies: Radio-5 and Radio-6—29,450 kHz; Radio-7 and Radio-8—29,500 kHz. In addition, radio beacons can operate on satellites Radio-6 and Radio-8 on the frequencies 29,410 kHz and 29,460 respectively.

An experimental period is continuing for the repeaters, during which operation takes place, as a rule, with reduced sensitivity.

Automatic operators - robots - are located on satellites Radio-5 and Radio-7 only. They operate on the frequencies: Radio 5—145,826 kHz (Earth to Space), 29,331 kHz (Space to Earth); Radio-7—145,835 kHz (Earth to Space), 29,341 kHz (Space to Earth).
(13 Jan. 82)

The amateur satellites Radio-3 - Radio-8, placed in orbit 17 December 1981, have on board an array of technical radio equipment permitting the conduct of experiments and of sport communications via a space repeater.

The new satellites differ in comparison with the first artificial earth satellites RS-1 and RS-2 in their more advanced power supply, heat regulations, and telemetry systems, their increased capability with respect to frequency band, and in the sensitivity of the repeater. Besides radio beacons and a repeater the on-board array of the satellites includes an automatic answerer—a robot, an on-board robot log, and an operational memory for circular announcements (bulletin board).

Radio Beacons. The satellites RS5 - RS8 each have two beacons for general use. The basic beacon is intended for the transmission of telemetry on the status of on-board systems. It is situated at the upper border of the repeater passband. The power of these amounts to 0.1 watt. They transmit an alphanumeric text in Morse code at a speed of 50 - 90 characters per minute. When monitoring such a beacon, an operator should know that a repeater passband stretches out for 40 kHz below it. On RS6 and RS8 there are additional beacons, situated at the lower border of the repeater passband. These beacons have two power levels, switched on command from Earth: 0.1 or 1.0 watts.

Satellites RS3 and RS4 each have one telemetry beacon with a power of 1 watt.

	RS-3	RS-4	RS-5	RS-6	RS-7	RS-8
Element Set #	17	19	16	13	16	25
Ref. Epoch	82 20.18563518	82 25.16066230	82 24.21603188	82 12.24515418	82 12.26612105	82 24.36567574
Drag Factor	2.3 E-07	8.8 E-07	−4.8 E-07	5.3 E-07	−1.0 E-07	2.01 E-06
Inclination	82.9597	82.9526	82.9587	82.9518	82.9493	82.9580
RAAN	260.4619	258.1027	258.6751	264.9320	265.0341	258.6316
Eccentricity	0.0059597	0.0018061	0.0008898	0.0050741	0.0021972	0.0019007
Arg. of Perigee	28.5696	65.4280	98.5023	54.5614	58.7466	136.6495
Mean Anomaly	331.8618	294.8661	261.7083	306.0208	301.5784	223.6066
Mean Motion	12.15571201	12.06649780	12.05031717	12.13535953	12.08656848	12.02915168
Ref. Epoch Rev.	410	467	455	313	312	456
Ref. Orbits						
10 Feb. 82	00:12:28	01:55:05	01:40:46	00:25:19	01:43:38	01:59:21
	253.9	279.1	275.4	257.0	276.4	280.0
17 Feb. 82	00:06:34	01:04:14	01:03:26	00:36:17	00:36:10	01:39:35
	263.2	277.1	276.8	270.5	270.2	285.8
24 Feb. 82	00:00:39	00:13:23	00:26:06	00:47:14	01:27:54	01:19:48
	272.5	275.0	278.1	284.1	293.9	291.5
3 Mar. 82	01:53:20	01:21:54	01:48:19	00:58:12	00:20:26	01:00:00
	281.8	303.0	309.4	297.6	287.7	297.2
Period (Anom.)	118.5870	119.39478	119.5547	118.71724	119.19683	119.76515
Long. Incr.	29.75640	29.97562	30.01578	29.80612	29.92611	30.06824

Repeaters. Repeaters, analogous to repeaters in RS1 and RS2, are installed on board RS5 - RS8. They are calculated for a maximum power of 1 - 1.5 watts and have a free, multi-station access in a 40 kHz passband with linear spectrum transfer from the 2-meter to the 10-meter band in real time. The repeaters have two sensitivity levels that can be changed on command from Earth: Maximum and reduced by 10 dB.

Robot. This is an Electronic logic device with memory, which can recognize calls acceptable in radio amateur practice, answer them, transmit control numbers, record in memory (in the on-board log) the callsigns and numbers, and also, on command from Earth, "dump" information from the on-board log to Earth for control of the contacts made and the making out of QSL cards. The capacity of the on-board log is 64 contacts. The capacity of the control number memory is 1000. After the filling of the on-board log and the dumping of the information to Earth on command from Earth, the erasure of the log's contents takes place. When this is done, the order of numbers can continue to be transmitted, up to the number 999, after which, again on command from Earth "zero-ing" of the numbers takes place. The robot receives calls and carries out communications in Morse code, and by the way can operate at different sending speeds depending on the speed of the call. It answers beginners, of course, at a low rate of speed, and aces at a high one. An invitation to establish communication with the robot of "Radio-5," for example, is transmitted by it with the following text: CQ CQ DE RS 5 QSU ON FQ 145830 KHZ. The RS7 robot announces a frequency of 145840 kHz.

A call to the robot by an Earth station must consist strictly of the following four words:

Callsign of the rotob—DE.

One's own callsign—AR (sent gogether).

The **bulletin board** serves for the transmission of circular announcements, principally concerning operational modes and procedures for the satellites, information from the Central Reception-Command Point, and so forth. The capacity of the memory is 20 words. Transmission may take place on the frequency of the second or first beacon, in Morse code.

Receiving apparatus on Earth. The signal level for RS3 - RS8 are the same as for RS1 and RS2 in their day. In connection with the fact that the satellites are not oriented in space, the signal level at the input of Earth receivers changes as a consequence of rotation of the satellites and uneven directivity patterns of their antennas. This especially affects the repeater mode, even with reduced repeater sensitivity. In order to avoid loss of information, it is recommended that special attention be paid to the receiving side of equipment and to receiving antennas. Receivers should have a sensitivity of not less than 0.5 uV. Antennas should preferably be directional, with a gain ratio of not less than 5 dB and maximum possible protection parameters. Satisfactory reception of the beacons, especially when operating with increased power, is possible with simple wire antennas and simple receivers with a sensitivity of 1 - 2 uV. It is recommended to carry out experiments with antennas with different polarizations: Linear, horizontal, and vertical, and also elliptical with various directions of rotation of the polarization plane.

Transmitting apparatus on Earth. The effective radiated power in the direction Earth to Space must be determined by the basic rule: The level of one's own signal, having gone through the repeater, should not exceed the signal level of the telemetry beacon. Otherwise overloading of the repeater may occur, which negatively affects the operation of other stations. Transmitters with regulated power are recommended. For purposes of illustration when working through a satellite located overhead, the power should be 10 times less than when the satellite is located near the horizon. The same sort of experiments is recommended with transmitting antennas as with receiving ones. The preferred mode of operation is CW.

When working the robot the maximum value of radiated power is not in principle significant, since the robot's receiver has a threshold detector. Below a certain power at the input of the receiver the signal regenerated by the robot will have a "broken-up" character, which signifies that the Earth transmitter has insufficient power.

A special article will be devoted to the telemetry system and the reception of telemetry information.

In conclusion, let us note that in the initial stages of the existance of the satellites numerous verifications of parameters and satellite systems are being carried out. Therefore, any reports or remarks concerning the operation of the radio systems will be of great interest to the designers. Please report on the results of your experiments to the FRS USSR or to the editorial board of "Radio" magazine.

(13 Jan. 82)

Diplomas Await You

Among radio amateurs of the whole world, wide popularity has been earned by diplomas (translator's note: In English, the word "certificate" would often be used rather than "diploma") issued by the Federation of Radiosport of the USSR and by the Central Radioclub of the USSR named after E.T. Krenkel—"R-15-R," "R-10-R, "R-100-O," "W-100-V," and others. Fulfilling the conditions for all these diplomas prior to the launching of radio amateur satellites was possible only on short wave. Now it has become technically possible to realize distant radio communications on ultrashort wave and consequently to fulfill the conditions for the diplomas on ultrashort wave as well.

The only condition for being able to fulfill them is becoming the presence of the necessary number of amateur ulstrshortwave stations in the republics and oblests, operating via repeater satellites.

The FRS of the USSR, at the suggestion (? - po predstavlaniyu) of the satellite communication committee of the Federation, already at the time of the launching of the first experimental satellites "Radio-1" and "Radio-2" (October 1978) decided to issue (with an appropriate sticker) international diplomas of the FRS USSR and of the CRC USSR to all applicants fulfilling the conditions for the diplomas using ultrashortwave radio communication via repeater satellites. This decision was intended to increase interest on the part of radio

amateurs in this new form of radio communication.

We briefly remind readers of the conditions for receiving the diplomas:

"R-15-R"—contact radio stations in all fifteen republics of the Soviet Union within 24 hours,

"R-10-R"—contact radio stations of the ten radio amateur areas of the Soviet Union within 24 hours,

"R-100-O"—contact 100 different radio stations of the Soviet Union,

"RAEM"—accumulate 68 QSO points for working Soviet radio amateur stations located beyond the Arctic and Antarctic Circles.

The issuance of the diplomas takes place in accordance with the procedure laid down by the FRS USSR. Diplomas are issued to observers (SWL's - Tr.) under analogous conditions. Counted are QSO's established via the "Radio" satellites beginning 26 October 1978.

Federation of Radiosport of the USSR

(13 Jan. 82)

First Space QSO's

The newspapers hadn't had time to come out yet with the official announcement on the launching of the amateur communication satellites, but already the radio amateur world, the enthusiasts of space communications had heard their callsigns, had recorded signals they had received, were making guesses, were analyzing. The only thing that was going on in the European and North American AMSAT Nets was discussion of the new event in space.

But now the first orbital measurements have been made. This work was done scrupulously and with great accuracy and sense of responsibility by I. Maroditskiy (RA9MEN) from Omsk, a veteran in radio amateur communication. Computers and calculators began to operate in Holland-PAØDLO, England-G3IOR, and in the USA-K1HTV.

But why is the "average" radio amateur not heard? I listen to telemetry channel "LG" and it's giving the number 10. This means that the repeaters are switched to reduced sensitivity. In the initial period of the satellites' flight this is necessary. All of the systems are not yet finally verified. Correction of operational modes is possible. Thus, for example, strong QSB lowers operational performance and clarity of speech.

OK, but how about the robot? We read what is registered: UV3FL-01, UW3HV-02 (Moscow), K8E(sic -Tr.)-03 (USA), PY2FFG-10 (Brazil), G3IOR-46 (England). We see W, KA, DL, HG, JS, UAØ, RA8. The last QSO - No. 57 - belongs to W1NU - holder of the "Space" diploma and the AMSAT bulletin station. He received this diploma for communications via RS1 and RS2.

I listened for a long time while R. Suvorova (UV4NI) tried to communicate with the robot. It didn't answer, not only on account of lots of interference, but principally on account of separated transmision of the signal AR. A mistake made by many. Finally, on the next orbit everything was done correctly and a QSO took place.

L. Labutin (UA3CR)
Master of Sport of the USSR,
Laureate of the Leninist (Komsomol) Prize

Ground Track For RS Birds

The data presented below was derived from the W3IWI program for tracking satellites as was published in *ORBIT* Magazine #6 and may be used to plot the ground track of the RS birds. The data was calculated using RS-7 as a basis and as typical of the other RS's. RS-7 currently has a period of 119.196 minutes with an inclination of 82.9493 degrees.

Time After EQX (minutes)	Latitude (degrees)	Longitude Change (degrees)
00	−0.1	0.0
02	5.9	−0.3
04	12.0	−0.6
06	18.0	−0.8
08	24.0	−1.2
10	30.0	−1.6
12	36.0	−2.2
14	42.0	−2.9
16	48.0	−3.9
18	53.9	−5.3
20	59.9	−7.3
22	65.7	−10.4
24	71.4	−15.6
26	76.8	−25.4
28	81.3	−46.9
30	82.9	−90.1
32	80.1	−127.0
34	75.2	−143.6
36	69.7	−151.5
38	63.9	−155.9
40	58.1	−158.6
42	52.2	−160.4
44	46.2	−161.6
46	40.3	−162.5
48	34.3	−163.2
50	28.4	−163.7
52	22.4	−164.1
54	16.4	−164.4
56	10.4	−164.7
58	4.4	−165.0
60	−1.5	−165.2

The equations below will yield the values above to a reasonable approximation. However, since the equations below assume a spherical earth (rather than the oblate spheroid it really is), you will find an occasional difference of as much as 2 parts per thousand between the tables above and the one generated by the equations below.

P = ARCSIN ((SIN(i))(SIN((360*t)/r)))*
*L = ARCCOS (COS((360*t)/r)/COS (P)) + 0.25*t*
where:
t = time past EQX in minutes
P = actual north latitude of satellite in degrees at time t
i = inclination of the orbit in degrees; e.g. 82.9493 for RS-7
r = period of the satellite in minutes; e.g. 119.196 for RS-7
L = the change in longitude to be added to the EQX longitude at time t

Transparencies of this ground track can be obtained for an SASE and a minimum $2.00 donation to AMSAT HQ, P.O. Box 27, Washington, D.C. 20044. Be certain that your SASE is at least 8" x 11" (203mm x 280mm) so we won't have to fold your acetate transparency!

The complete locator package (less RS overlays) is available also from AMSAT for $7.00 plus $1.00 shipping and handling. (U.S., Canada and Mexico). AMSAT receives a commission on all units sold through AMSAT HQ so naturally we would like you to obtain your copy of the handsome ARRL publication from us!

AMSAT Name Secure After Running Battle

After a series of challenges, confrontations, attempted negotiations and widespread identity confusion, the United States Patent and Trademark Office has recognized The Radio Amateur Satellite Corporation and its right to exclusive use of the name "AMSAT" for "indicating membership in an association of persons interested in amateur radio communications satellites." The first use of AMSAT name was documented to be March 1969. The Trademark issued to AMSAT, Reg. No. 1,182,576 Dec. 15, 1981, is good for 20 years.

The name AMSAT had also been claimed by the American Satellite Corporation of Gemantown, Maryland. Many individuals and publications continue to erroneously refer to American Satellite as AMSAT. the misnomer seems to be abetted by analogy to the Communications Satellite Corporation which is foreshortened to COMSAT.

AMSAT has been approached on more than one occasion in an attempt to secure the rights to use the name "AMSAT". However, each time the negotiations were fruitless.

The trademark petition issue has been diligently pursued by Dr. Norm Chalfin, K6PGX of Pasadena. Norm, who works for the Jet Propulsion Laboratory, is a patent attorney. He has been AMSAT's "guardian" on the issue for years and manifestly added to the Corporate balance sheet with this victory. In realistic terms the acquisition of the trademark is valued at more than $250,000 by AMSAT Officials.

Phase III Countdown Starts Next Issue

Hobby and Career Interests Same For Military Satellite Builder

Los Angeles, Calif.—Mix together a lifetime interest in electronics, add amateur radio experience and some science; blend that with a full time military management career in communications and aviation, and you have Air Force Colonel John W. Browning, (W6SP) Space Communications Systems director for the Air Force Space Division in Los Angeles, the nation's military space headquarters organization.

Colonel Browning heads a Space Division office responsible for deploying five different military space communications programs, four of which have operational satellites on orbit. Space Division is responsible for developing, launching and controlling most Department of Defense space systems.

"My hobby and career interests have paralleled each other over the years," the colonel said, finding the two very complementary. "I get actual experience as an amateur communicator in my spare time while working the military side of it on the job."

"Having evolved myself professionally into the space world and military communications satellites, I guess it was only natural to bring my hobby in the same direction."

Sitting high on the Palos Verdes Hills overlooking the Pacific Ocean and the Los Angeles area, Colonel Browning's home bristles with equipment and antennas for the amateur communications bands. He also has a tracking antenna for communication through the two currently operational amateur radio satellites, ones he helped build a few years ago.

As an amateur radio operator with military space experience, it seemed only natural to his civilian peers that he should be elected chairman of the board of directors of the Radio Amateur Satellite Corporation.

AMSAT, a non-profit, education-oriented public service organization headquartered in Washington, D.C., is composed of 5,000 members scattered throughout 40 different countries. AMSAT develops and operates amateur satellites which have been dubbed OSCAR (for orbiting satellites carrying amateur radio). Amateur space activity serves to introduce interested newcomers, particularly young people, to space communications.

"The AMSAT program is much like a military one; the problems are identical," Colonel Browning said. "Getting the people and funds to build amateur radio satellites, overseeing manufacturing, testing them, and then trying to get them launched is something I face every day at work."

Now international in nature, amateur radio satellites have developed a user community of communicators similar to their military and commercial counterparts. These users establish the requirements and help pay the bills he said.

"I have been interested in amateur radio satellites since I got into the space business and became more involved as a ham. Like all volunteer programs, they are always looking for people to take on responsibilities so I took on the board job."

The Air Force colonel was first licensed in 1948 and holds an Amateur Extra Class ticket. His present callsigns are W6SP, W8DDF, W6ASA, G5ASA (England) and ON8SR (Belgium). Former calls included DL5DD (Germany), KA2DD (Japan), OX5ND (Greenland) and S79S (Syechelles).

His liking for electronics grew out of a boyhood interest increased by World War II pilot training requirements in radio, and college study. He holds a bachelor of science degree in electrical engineering from West Virginia University and a master of science in industrial management from Purdue. His military background ranges over 38 years from bomber and jet fighter pilot experience to avionics maintenance and electronics engineering.

He finds it all still blending together daily.

"As you mature in the military or in business, you have less chance for that 'hands on' fun of using or working on equipment. Instead you get to tell someone else to do it.

"With amateur radio however, I can still do both. It's personally satisfying," Colonel Browning said.

Official USAF Release

ASR *Spotlight On: W6SP*

W6SP is your Chairman of the Board. You elected him to the Board of Directors and the Directors themselves voted John W. Browning, W6SP, to the Chairmanship. He thus sits at the center of the center of AMSAT; the very seat of power which energizes this international organization; this curious hybrid of amateurs and professionals; of technicians and operators; of managers and members. In past *ASR* Spotlights we have tended to focus on middle-managers such as KO5I, Net Control Station; WØCY, Net Control Station; W2FPY, R&D Director. We've had a few DXers such as W2BXA, W8DX and WØCA. The only real exception was our feature on JA1ANG on the occasion of his election to the Board of Directors. We have tried to focus on middle managers to both thank them for their work by a small amount of recognition and to encourage others to become managers with the assurance that recognition was available.

Conversely we have steered clear of focusing on the central core (senior managers) of AMSAT in order to avoid appearing incestuous or self indulgent (or both!). On the other hand we perceive an abiding need on behalf of the membership to know who's in charge, so to speak. This is especially true now with the organization virtually poised at the ready awaiting the greatest growth spurt in its history, possibly a doubling before the year is out. Another reason for the temporary change in philosophy in the *ASR* Spotlight column is the occasion of the retirement from active military duty of our Chairman, W6SP. We thought that the time was right to take a look at the man at the center of the center and in so doing come to grips with how fortunate we are to have a leader of his caliber in our #1 chair!

In spotlighting W6SP we will be looking at two sides of the individual. W6SP has become Chairman of the Board through an interesting path. Even more interesting perhaps is the story of Colonel John W. Browning, Deputy for Space Communications Systems, United States Air Force.

Parting Shot

On the day W6SP was due to have his retirement party (Friday, 29 Jan. 82) the following telegram was sent to John from your Editor, WA2LQQ.

"Colonel John W. Browning, 6202 Lochvale Dr. Rancho Palos Verdes, Ca 90274. Congratulations. Having successfully bridged nearly 4 decades of military service, your unmitigated optimism is an endless source of wonder. Surely you now deserve a relaxed, reflective retirement in which to compose your memoirs and to play with your radios. Do you listen? No. Will you ever really retire? No. Will you ever be deflected from your objectives? Hell no. Regards anyway. Ellen and Rip for AMSAT."

Early morning traffic nets are one of the special interests of Col. Browning, W6SP. (Photo by SSgt. T. Taylor)

(Editors Note: Occasionally I get asked and occasionally I just wonder to myself what it is about editing a newsletter such as *ASR* that justifies the enormous burdens on family and self. Surely there are more "fun" things to do such as fiddling with the radios and so forth. Somewhat less frequently the rewards of this enterprise are so obvious that I kick myself for even doubting what this "thing" is all about! This is one of those moments.

Here in the *ASR* Spotlight feature we have tried to focus on a few individuals who have in some measure distinguished themselves for the betterment of the Amateur Satellite Program. We have taken the admittedly romantic notion of selfless dedication to the service of others as a major criterion. We hope that this has been self-evident.

What is less obvious, we suspect, is that in featuring these selfless individuals we are in turn finding our own rewards.

We've hear it said that when in the company of men of great character that there abides about these individuals a certain presence. Some use the term charisma. I shun it as overworked. Yet there is no doubt in anyone who has worked with W6SP that he has "it" (whatever IT is). Men of character and leadership are rare. And to interact with them is a rare privilege. Your Editor is privileged to interact with W6SP and it is the opportunity to (try) to represent the immense character of the individual to the reader that is at once a great challenge and its own reward!)

This issue of *ASR* celebrates our first year of publication and honors our Chairman W6SP (See Spotlight).

Happy reading! We hope you've enjoyed being with us. And we hope we'll see your renewal subscription too. Please renew promptly so you don't miss a single issue. We'll remind you once when it's time. Then it's up to *you*! Thanks again for coming aboard. If you like what you read, please tell your friends!

	AO-8	UO-9
Element Set #	628	98
Ref. Epoch	82 30.52497354	82 29.06084812
Drag Factor	1.45 E-06	8.566 E-05
Inclination	98.7963	97.4745
RAAN	61.6114	353.9266
Eccentricity	0.0005637	0.0002067
Arg. of Perigee	278.8833	225.1137
Mean Anomaly	81.1740	134.9931
Mean Motion	13.96398044	15.12725460
Ref. Epoch Rev.	19908	1732
Ref. Orbits		
10 Feb. 82	01:23:13	00:42:08
	@ 89.0	@ 145.9
17 Feb. 82	00:11:34	01:02:10
	@ 71.2	@ 149.7
24 Feb. 82	00:43:04	01:16:23
	@ 79.3	@ 153.3
3 Mar. 82	01:14:34	01:29:49
	@ 87.4	@ 156.7
Period (Anom.)	103.17893	95.24360
Long. Incr.	25.79691	23.81129

Remember the Midwest Fete?

(see ASR-25)

(Photos by K8DKO)

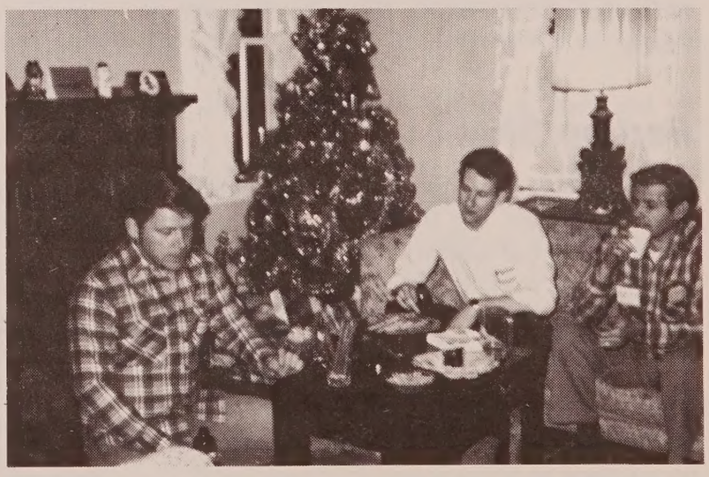
Above: **OSCAR's Birthday Cake.**

Upper right: **WB8AYM, Editor of the *Knox County Ham Scan*, and K8OCL discuss the exciting future of the Satellite Program over refreshments.**

Right: **AB8W, KB8ZS, and N8CIY discuss the antenna system at K8OCL.**

Pair Figure in Snare of W6SP

Two long-time OSCARites were the key to recruiting W6SP into the Amateur Satellite field as a natural complement to his professional interests. John Pronko, W6XN met John, W6SP, when the latter was working at the Air Force Satellite facility at Sunnyvale. W6XN had been active with Project OSCAR for a number of years and saw in W6SP a potential for Project OSCAR leadership. Soon W6SP was elected a Director of Project OSCAR. Later, Bud Schultz, W6CG, got wind of the new talent up north and tried to get W6SP (then still W6ASA) to become an AMSAT Area Coordinator for Northern California. Before the issue could be settled, however, W6SP was transferred to the Los Angeles area. Then the stakes changed considerably. Bud said he would support W6SP for AMSAT Director. W6SP was nominated by the required five members and was duly elected. Then in the final coup (John still calls it an ill-disguised railroad job) W6SP was elected Chairman of the Board of AMSAT, a new position at the time essentially created upon his being seated. All AMSAT seems the better for our good fortune in having W6SP aboard (railroad job notwithstanding!!).



AMSAT Satellite Report *is published and mailed First Class bi-weekly by The Radio Amateur Satellite Corporation, P.O. Box 27, Washington, DC 20044 for the purpose of enhancing communications about the Amateur Radio Satellite Program. Subscription rate is $18.00 ($26.00 overseas) yearly by check or money order to "Satellite Report," 221 Long Swamp Road, Wolcott, CT 06716. Information published herein may be quoted without permission provided credit is given.*